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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/694,772

10/29/2003

Yosuke Miki

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EXAMINER

VERBITSKY, GAIL KAPLAN

ART UNIT

PAPER NUMBER

2855

MAIL DATE

DELIVERY MODE

12/31/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/694,772

Applicant(s)

MIKI ET AL.

Examiner

Gail Verbitsky

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/11/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-5 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Betzner et al. (U.S. 20020071475) [hereinafter Betzner] in view of Schmermund (U.S. 6341892).

Betzner discloses in Fig. 1 a device in the field of applicant's endeavor comprising a flexible circuit board having a plurality (at least two) of layers, an insulating substrate layer 14 and a conductive/ wired layer on top of it. A central portion of the substrate is narrow; one end portion 14a of the substrate is flat and widened. The conductor layer 16 along with a temperature detecting portion 22 provides a change in resistance indicative of temperature to be measured. The device has an insulating cover/ layer on a top of the temperature sensing device.

Betzner does not teach the particular temperature detecting portion of the particular pattern.

Schmermund discloses in Fig. 2 a device comprising a base insulating substrate/board having a conductive layer comprising a temperature detecting portion formed as a wiring made of a thin film platinum/ metal foil) 16 formed in a serpentine pattern (wiring folded in such continuous form that adjacent parts of the wiring parallel are spaced apart from each other at a predetermined interval), as shown in Fig. 2. The portion 16, inherently, changes its resistivity (specific resistance) proportionally to a temperature change. As shown in Fig. 2, the conductor layer formed entirely to the base

insulating layer in a predetermined (desired) pattern, wherein the base insulating layer has a generally rectangular flat strip shape (thin) with generally rectangular widened end portions A, B and a central portion C. The conductive layer, inherently, changes its resistance (specific) proportional to a temperature change.

The base insulating layer is formed on to one side (under one side) of the conductor layer. The temperature-detecting portion D is formed on the top of the base insulating layer at the generally rectangular flat widened portion A. (The numerals A-D have been added by the examiner, see attachment # 1 to the Office action).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Betzner, so as to have a temperature detecting portion/ resistive element shaped as taught Schmermund, because both of these temperature sensing resistive elements are alternate types of temperature sensing resistive elements which will perform the same function of sensing the temperature of an object of interest, if one is replaced with another.

With respect to the particular shape of the flexible substrate/ base:, i.e., flat narrow central portion and widened ends, absent any criticality, is only considered to be an obvious modification of the shape disclosed by Betzner because the court has held that a change in shape or configuration, without criticality, is within the level of skill in the art as the particular shape claimed by applicant is nothing more than one of numerous shapes that a person having ordinary skill in the art will find obvious to provide. In re Dailey, 149 USPQ 47 (CCPA 1976). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify the circuit board,

disclosed by Betzner, because the particular shape of the circuit board, absent any criticality, is only considered to be an obvious modification of the shape disclosed by because the particular shape of the conductor layer, absent any criticality, is only considered to be an obvious modification of the shape disclosed by Betzner the court has held that a change in shape or configuration, without criticality, is within the level of skill in the art as the particular shape claimed by applicant is nothing more than one of numerous shapes that a person having ordinary skill in the art will find obvious to provide. In re Dailey, 149 USPQ 47 (CCPA 1976).

Betzner does not explicitly teach the limitations of claims 4 and 5.

For claim 4: the particular length of the temperature detecting portion, i.e., 50 mm or more, as stated in claim 4, absent any criticality, is only considered to be the "optimum" length of the temperature detecting portion used by Betzner that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation based, among other things, on the temperature range to be measured, etc. See In re Boesch, 205 USPQ 215 (CCPA 1980).

For claim 5: the particular pitch, space between the adjacent parts of the temperature detecting portion, i.e., 100 microns or more, as stated in claim 5, absent any criticality, is only considered to be the "optimum" pitch of the temperature detecting portion used by Betzner that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation based, among other things, on the temperature range to be measured, etc. See In re Boesch, 205 USPQ 215 (CCPA 1980).

For claim 18: using the particular material, i.e., polyimide, for a cover layer, absent any criticality, is only considered to be the "optimum" material that a person having ordinary skill in the art at the time the invention was made using routine experimentation would have found obvious to provide for the cover layer disclosed by Betzner since it has been held to be a matter of obvious design choice and within the general skill of a worker in

the art to select a known material on the basis of its suitability for the intended use of the invention. In re Leshin, 125 USPQ 416.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Betzner and Schmermund, as applied to claims 1, 3-5, 18 above, and further in view of JP 61179764A [hereinafter JP2].

Betzner and Schmermund disclose the device as stated above.

They do not explicitly teach the limitations of claim 2.

JP2 teaches a conductor layer can be either aluminum or a stainless steel film.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Betzner and Schmermund and Ketcham, so as to make the conductor layer of a stainless steel, as taught by JP2, because the particular material, i.e., stainless steel, as stated in claim 2, for the conductor layer, absent any criticality, is only considered to be the "optimum" material that a person having ordinary skill in the art at the time the invention was made using routine experimentation would have found obvious to provide for the conductor layer, disclosed by Betzner and Schmermund since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the device.

Response to Arguments

Applicant's arguments with respect to claims 1-5 and 18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

Shoberger (U.S. 6077228) discloses a temperature sensing device comprising a flat flexible substrate (flex wired circuit board), a conductor layer including temperature sensing elements (thermistors) formed as wiring from a metal (foil) of a predetermined pattern, as shown in Fig. 2, the conductor layer having two sides; a base insulating layer having two sides, wherein the conductor layer is positioned on the base insulating layer with one side. It is inherent, that the metal foil of the conductor layer has predetermined relationship/ change in resistance with change in temperature to be measured.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gail Verbitsky whose telephone number is 571/ 272-2253. The examiner can normally be reached on 7:30 to 4:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571/ 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GKV

Gail Verbitsky
Primary Patent Examiner, TC 2800



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